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SCIENCE

FRIDAY, NOVEMBER 23, 1888.

THE MOST CASUAL READER of magazines and reviews cannot have failed to notice the increasing share of attention being given by them to educational matters. The *Century* has honored the memory of Dr. Edward Thwing, and described Uppingham School; it has also given space to a discussion of manual training and to other school subjects. The *Atlantic Monthly* printed in a prominent position President Eliot's suggestions as to how the school courses might be enriched and shortened. And now comes the *Nineteenth Century*, which, in its November issue, gives the post of honor to a document which, it is safe to say, will rank as one of the most important and significant of modern times. It is a protest against the sacrifice of education to examination, and is signed by several hundred of the most prominent and influential men and women in Great Britain. We notice in the long list the names of Professor Bryce, Henry Bradlaugh, Lord Lytton, Grant Allen, Prof. J. S. Blackie, Oscar Browning, Canon Creighton, Edward A. Freeman, Edmund Gosse, Frederic Harrison, Dr. James Martineau, Frederick Pollock, G. J. Romanes, Professor Westcott, Lionel Beale, Dr. Crichton-Browne, Sir Morell Mackenzie, Sir Edwin Arnold, Mrs. E. Lynn Linton, and Miss Charlotte M. Yonge.

The document records the "strong protest of the signers against the dangerous mental pressure, and misdirection of energies and aims, which are to be found alike in nearly all parts of our educational system. Alike in public elementary schools, in schools of all grades and for all classes, and at the universities, the same dangers are too often showing themselves under different forms. Children are treated by a public department, by managers and schoolmasters, as suitable instruments for earning government money; young boys of the middle and richer classes are often trained for scholarships with as little regard for the future as two-year old horses are trained for races; and young men of real capability at the universities are led to believe that the main purpose of education is to enable them to win some great money prize, or take some distinguished place in an examination. We protest most emphatically against such a misdirection of education, and against the evils which necessarily arise from it." The resulting evils are then specified in detail and at some length. They are classified as physical, intellectual, and moral. The *Nineteenth Century* prints, together with the protest, comments on it by Prof. Max Müller, by Professor Freeman, and by Frederic Harrison. Professor Müller recalls the fact that he was, forty years ago, an ardent supporter of a system of examinations for the civil service. He now sees that this has been carried too far, and the fault has been, not with the application of the principle of examination, but with the principle itself. Mr. Harrison's paper is the most pungent and practical of all. He points out that "examination, having been called in to aid education, has grown and hardened into the master of education. Education is becoming the slave of its own creature and servant. I do not deny that examination has its uses; I do not say that we can do without it. I say that it is a good servant, but a bad master; and, like good servants turned bad masters, it is now bullying, spoiling, and humiliating education."

It will be interesting to notice how much attention this important paper attracts in this country, and how much influence it will have with these slaves of routine and examinations, our old-fashioned

schoolmasters. There are men who regard the examination as sacred, and not to be touched or altered, and there are systems, that of New York City, for example, that are built upon a vicious examination system as a foundation. Some time since, we called the attention of the readers of *Science* to this examination question, and printed some valuable articles on the subject. We can only hope that our American teachers will listen to the voice of England's experience, and take some steps that will make such a protest both unnecessary and impossible in the United States.

THE QUESTION WHETHER the growth of forests causes an increase of rainfall is both a scientific and an economic one; and as not only in this country, but also in Europe, great corporate or private interests are to be affected by its decision, much of the discussion of it, unfortunately, has not been of a purely scientific character. It has not been carried on for the purpose of arriving at the truth, but to sustain some proposition asserted in advance to be true. It has been what Professor Henry would have called 'debate' as distinguished from 'discussion.' In Europe there is a great outcry among the common people against the maintenance of forests over such great areas for the preservation of game and to promote the personal pleasures of a few nobles, while the peasants are starving for the want of land to cultivate. But the nobles reply, that, if the forests are cut down, the rainfall will be diminished, the lands that are now fertile will become barren, so that the common people will be worse off than ever; and they send forth their well-paid scientific men to establish stations, make investigations, and prove the truth of this proposition. We do not mean to say that scientific men in Europe consciously prostitute themselves in this way,—they earnestly seek the truth, and do so with much learning and diligence,—but, so often has it been asserted that the growth of forests promote rainfall, that it has almost become an axiom in science as well as among the people; and the results of any investigations that seem to sustain it are of necessity more readily entertained than those which point to the converse. An interesting account of the latest and the most thorough examination of a small area for the purpose of solving this question is given in the abstract of Professor Fernow's paper, read before the Philosophical Society of Washington at a recent meeting. In this country many of the great railroad corporations have vast areas of land to sell in the Far West. They desire to induce Eastern people to go there, settle on these lands, and build up cities and towns, so that the business of their lines may be increased. But an idea prevails in the East that the best lands have already been occupied; that the rainfall beyond the present line of civilization is either so small, or so unevenly distributed throughout the year, as to make the successful production of a crop a matter of great uncertainty; and they hesitate. But the agents of the railroad companies reply that the climate of the Far West has changed; that the planting of trees upon what was once arid lands has increased the amount of rainfall, and caused a more equal distribution of the water in the streams; so that now lands that were once unfit for cultivation have become fertile, and certain to produce crops every year; and they quote figures to prove it. Fortunately there are men engaged in the investigation of this subject who have no interests to serve but the discovery of the truth; and *Science*, in its present issue, presents contributions to this branch of the discussion by two men of this class. The truth can be reached only after a thorough discussion.